

```

1 // [UNIX ls 指令/UNIX ls](1/4)
2 #define IN "P020IN.txt"
3 #define OUT "P200UT.txt"
4 //*****
5 #include <iostream>
6 #include <ctime>
7 using namespace std;
8 void redir(void);
9 //*****
10 /* Work Space*/
11 #include <string>
12 #include <algorithm>
13 void print(string s, int len, char extra);
14 //*****
15 int main(void)
16 {
17     redir(); //redirection
18 //*****
19 /* Work Space*/
20     int n;
21     int M;
22     string filename[100];
23     int i;
24     int cols, rows;
25     int r, c;
26     int id;
27
28     while(scanf("%d", &n) == 1){
29         M = 0;
30         for(i=0; i<n; i++){
31             cin >> filename[i];
32             M = max(M, (int)filename[i].length()); //注意轉型: (int)filename[i].length()
33         }
34
35         cols = (60 - M)/(M + 2) + 1; //常數60來自題目: 每列60個字元
36         rows = (int)ceil(double(n)/cols); //注意轉型
37
38         print("", 60, '-');
39         cout << endl;
40
41         sort(filename, filename+n);
42         for(r = 0; r < rows; r++){
43             for(c = 0; c < cols; c++){
44                 id = c * rows + r; //column-major
45                 if(id < n){
46                     print(filename[id], c == cols-1 ? M : M+2, ' ');
47                 }
48             }
49             cout << endl;
50         }
51     }
52
53 //*****
54     freopen("CON", "r", stdin); //取消重新導向
55     freopen("CON", "w", stdout);
56
57     printf("Time used = %.2f\n", (double)clock()/CLK_TCK); //傳回程式目前為止執行的時間
58
59     system("pause");
60     return 0; //the end...
61 }
62
63

```

```
64 //[UNIX ls 指令/UNIX ls](2/4)
65 void redir(void)
66 {
67     freopen(IN, "r", stdin);
68     freopen(OUT, "w", stdout);
69 }
70 //*****
71 /* Work Space*/
72 //輸出字串s，長度不足len時補字元extra
73 void print(string s, int len, char extra)
74 {
75     int i;
76
77     cout << s;
78     for(i=0; i<len-s.length(); i++){
79         cout << extra;
80     }
81 }
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127 //[UNIX ls 指令/UNIX ls](3/4)  
128 //Input(IN) Sample  
129 /\*  
130 10  
131 tiny  
132 2short4me  
133 very\_long\_file\_name  
134 shorter  
135 size-1  
136 size2  
137 size3  
138 much\_longer\_name  
139 12345678.123  
140 mid\_size\_name  
141 12  
142 Weaser  
143 Alfalfa  
144 Stimey  
145 Buckwheat  
146 Porky  
147 Joe  
148 Darla  
149 Cotton  
150 Butch  
151 Froggy  
152 Mrs\_Crabapple  
153 P.D.  
154 19  
155 Mr.\_French  
156 Jody  
157 Buffy  
158 Sissy  
159 Keith  
160 Danny  
161 Lori  
162 Chris  
163 Shirley  
164 Marsha  
165 Jan  
166 Cindy  
167 Carol  
168 Mike  
169 Greg  
170 Peter  
171 Bobby  
172 Alice  
173 Ruben  
174 \*/  
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188  
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```
190 //[UNIX ls 指令/UNIX ls](4/4)
191 //Output(OUT)
192 /*
193 -----
194 12345678.123          size-1
195 2short4me             size2
196 mid_size_name         size3
197 much_longer_name      tiny
198 shorter               very_long_file_name
199 -----
200 Alfalfa              Cotton          Joe              Porky
201 Buckwheat            Darla           Mrs_Crabapple     Stimey
202 Butch                Froggy          P.D.              Weaser
203 -----
204 Alice               Chris          Jan              Marsha          Ruben
205 Bobby              Cindy          Jody             Mike            Shirley
206 Buffy              Danny          Keith            Mr._French      Sissy
207 Carol              Greg           Lori             Peter
208 */
209
```